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■

COAL MINE HEALTH AND SAFETY

Electrical Equipment, Lamps, Methane Detectors; Tests for Permissibility; Fees

Title 30—MINERAL RESOURCES

Chapter I—Bureau of Mines, Department of the Interior

SUBCHAPTER D—ELECTRICAL EQUIPMENT, LAMPS, METHANE DETECTORS; TESTS FOR PERMISSIBILITY; FEES

PART 28—FUSES FOR USE WITH DIRECT CURRENT IN PROVIDING SHORT-CIRCUIT PROTECTION FOR TRAILING CABLES IN COAL MINES

Pursuant to the authority vested in the Secretary of the Interior under section 508 of the Federal Coal Mine Health and Safety Act of 1969 (30 U.S.C. 957), and 36 Stat. 369, as amended, 37 Stat. 681, 30 U.S.C. 3, 5, and 7, and in accordance with section 306(b) of the Act (30 U.S.C. 866(b)) which provides that short-circuit protection for trailing cables used in coal mines shall be provided by an automatic circuit breaker or other no less effective device approved by the Secretary, there was published in the FEDERAL REGISTER for August 5, 1971 (36 F.R. 14448), a notice of proposed rule making which prescribed the requirements for testing and approval of fuses for use with direct current in providing short-circuit protection, no less effective than automatic circuit breakers, for trailing cables in coal mines.

Interested persons were afforded a period of 45 days from the date of publication of the notice in which to submit written comments, suggestions, and objections to the proposed requirements. All comments, suggestions, and objections were given careful and thorough consideration.

Some of the requirements were revised as suggested and in other instances revisions were made in view of the comments received. Certain procedural revisions have also been made. Examples of causes which may result in revocation of the certificate of approval have been specified. The quality control provisions have been refined so as to specify more exactly the sampling procedures and characteristics required to be sampled. Furthermore, since the Bureau does not conduct the actual testing of fuses under the requirements of this part, and in order to ensure the short-circuit protection capability of approved fuses, such fuses must be retested within a 2-year period from the date of the certificate of approval, and every 2 years thereafter (§ 28.23(h)).

Part 28—Fuses for Use with Direct Current in Providing Short-Circuit Protection for Trailing Cables in Coal Mines—of Subchapter D, Chapter I, Title 30, Code of Federal Regulations, as set forth below, is herewith promulgated and shall become effective 60 days following publication in the FEDERAL REGISTER.

W. T. PECORA,
Acting Secretary of the Interior.

APRIL 10, 1972.

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AUTHORITY: The provisions of this Part 28 issued under secs. 306(b) and 508 of the Federal Coal Mine Health and Safety Act of 1969 (30 U.S.C. 801, 83 Stat. 742), and 36 Stat. 369, as amended, 37 Stat. 681, 30 U.S.C. 3, 5, and 7.

Subpart A—General Provisions

§ 28.1 Purpose.

The purpose of the regulations contained in this Part 28 is: (a) To establish procedures and prescribe requirements which must be met in filing applications for the approval of fuses for use with direct current in providing short-circuit protection for trailing cables in coal mines, or the approval of changes or modifications of approved fuses; (b) to specify minimum performance requirements and to prescribe methods to be employed in conducting inspections, examinations, and tests to determine the effectiveness of fuses for use with direct current in providing short-circuit protection for trailing cables in coal mines; and (c) to provide for the issuance of certificates of approval or modifications of certificates of approval for fuses which have met the minimum requirements for performance and short-circuit protection set forth in this part.

§ 28.2 Approved fuses.

(a) On and after the effective date of this part, fuses shall be considered to be approved for use with direct current in providing short-circuit protection for trailing cables in coal mines only where such fuses are: (1) The same in all respects as those fuses which have been approved after meeting the minimum requirements for performance and short-circuit protection prescribed in this Part 28; and (2) maintained in an approved condition.

§ 28.3 Installation, use, and maintenance of approved fuses.

Approved fuses shall be installed and maintained in accordance with the specifications prescribed by the manufacturer of the fuses, and shall be selected and used in accordance with the standards prescribed for short-circuit protective devices for trailing cables in Parts 75 and 77, Subchapter O of this chapter.

§ 28.4 Definitions.

As used in this part—

(a) "Applicant" means an individual, partnership, company, corporation, association, or other organization that designs, manufactures, assembles, or fabricates, or controls the design, manufacture, assembly, or fabrication of a fuse, and who seeks to obtain a certificate of approval for such fuse.

(b) "Approval" means a certificate or formal document issued by the Bureau stating that an individual fuse or combination of fuses has met the minimum requirements of this Part 28, and that the applicant is authorized to use and attach an approval label or other equivalent marking to any fuse manufactured, assembled, or fabricated in conformance with the plans and specifications upon which the approval was based, as evidence of such approval.

(c) "Approved" means conforming to the minimum requirements of this Part 28.

(d) "Bureau" means the U.S. Bureau of Mines, Department of the Interior.

(e) "Fuse" means a device, no less effective than an automatic circuit breaker, for use with direct current which provides short-circuit protection for trailing cables in coal mines by interrupting an excessive current in the circuit.

Subpart B—Application for Approval

§ 28.10 Application procedures.

(a) Each applicant seeking approval of a fuse for use with direct current in providing short-circuit protection for trailing cables shall arrange for submission, at his own expense, of the number of fuses necessary for testing to Westinghouse Electric Corp., High Voltage Test Laboratory, East Pittsburgh, Pa. 15112, or General Electric Co., High Voltage Laboratory, 7500 Lindberg Boulevard, Philadelphia, PA 19155, or any other nationally recognized independent testing laboratory capable of performing the examination, inspection, and testing requirements of this part.

(b) The applicant shall insure, at his own expense, that the examination, inspection, and testing requirements of this part are properly and thoroughly performed by the independent testing laboratory of his choice.

(c) Upon satisfactory completion by the independent testing laboratory of the examination, inspection, and testing requirements of this part, the data and results of such examination, inspection,

and tests shall be certified by both the applicant and the laboratory and shall be sent for evaluation of such data and results to the Bureau of Mines, Health and Safety Technical Support Center, 4800 Forbes Avenue, Pittsburgh, PA 15213. Attention: Approval and Testing.

(d) The certified data and results of the examinations, inspections, and tests required by this part and submitted to the Bureau shall be accompanied by a check, bank draft, or money order in the amount of $55 for each fuse size and type payable to the order of the U.S. Bureau of Mines.

(e) The certified data and results of the examinations, inspections, and tests required by this part and submitted to the Bureau for evaluation shall be accompanied by a proposed plan for quality control which meets the minimum requirements set forth in Subpart D of this part.

(f) Each applicant shall deliver to the Bureau, at his own expense, three fuses of each size and type which may be necessary for evaluation of the examination, inspection, and test results by the Bureau.

(g) Applicants or their representatives may visit or communicate with Approval and Testing in order to discuss the requirements for approval of any fuse, or to obtain criticism of proposed designs; no charge shall be made for such consultation and no written report shall be issued by the Bureau as a result of such consultation.

Subpart C—Approval and Disapproval

§ 28.20 Certificates of approval; scope of approval.

(a) The Bureau shall issue certificates of approval pursuant to the provisions of this subpart only for individual, completely fabricated fuses which have been examined, inspected, and tested as specified in § 28.10, and have been evaluated by the Bureau to ensure that they meet the minimum requirements prescribed in this part.

(b) The Bureau shall not issue an informal notification of approval.

§ 28.21 Certificates of approval; contents.

(a) Each certificate of approval shall contain a description of the fuse and a classification of its current-interrupting capacity and current rating.

(b) The certificate of approval shall specifically set forth any restrictions or limitations on the use of the fuse in providing short-circuit protection for trailing cables.

(c) Each certificate of approval shall be accompanied by a reproduction of the approval label or marking design, as appropriate, to be employed by the applicant with each approved fuse as provided in § 28.23.

(d) No test data or specific laboratory findings will accompany any certificate of approval, however, the Bureau will release analyses of pertinent test data and specific findings upon receipt of a written request by the applicant, or when required by statute or regulation.

(e) Each certificate of approval shall also contain the approved quality control plan as specified in § 28.31.

§ 28.22 Notice of disapproval.

(a) If, upon completion of the evaluation by the Bureau conducted in accordance with § 28.10, it is determined that the fuse does not meet the minimum requirements set forth in this part, the Bureau shall issue a written notice of disapproval to the applicant.

(b) Each notice of disapproval shall be accompanied by all available findings with respect to the defects of the fuse for which approval was sought with a view to the possible correction of any such defects.

(c) The Bureau shall not disclose, except to the applicant upon written request or when required by statute or regulation, any data, findings, or other information with respect to any fuse for which a notice of disapproval is issued.

§ 28.23 Approval labels or markings; approval of contents; use.

(a) Approval labels shall bear the seal of the U.S. Bureau of Mines, an approval number, the restrictions, if any, placed upon the use of the fuse by the Bureau, and where appropriate, the applicant's name and address.

(b) Upon receipt of a certificate of approval, the applicant shall submit to the Bureau, for approval of contents, full-scale reproductions of approval labels or markings, as appropriate, and a sketch or description of the method of application and position on the fuse, together with instructions for the installation, use, and maintenance of the fuse.

(c) Legible reproductions or abbreviated forms of the label or markings approved by the Bureau shall be attached to or printed on each fuse.

(d) Each fuse shall be marked with the rating of the Underwriters Laboratories, Inc.

(e) The Bureau shall, where necessary, notify the applicant when additional labels, markings, or instructions will be required.

(f) Approval labels or markings shall only be used by the applicant to whom they were issued.

(g) The use of any Bureau approval label or marking obligates the applicant to whom it is issued to maintain or cause to be maintained the approved quality control sampling procedure and the acceptable quality level for each characteristic tested, and to guarantee that the approved fuse is manufactured according to the specifications upon which the certificate of approval is based.

(h) The use of any Bureau approval label or marking obligates the applicant to whom it is issued to retest the approved fuse within a 2-year period from the date of the certificate of approval, and every 2 years thereafter, in accordance with the provisions of § 28.10.

§ 28.24 Revocation of certificates of approval.

The Bureau reserves the right to revoke, for cause, any certificate of approval issued pursuant to the provisions of this part. Such causes include, but are not limited to, misuse of approval labels and markings, misleading advertising, violations of section 109(e) of the Federal Coal Mine Health and Safety Act of 1969 (30 U.S.C. 819(e)), and failure to maintain or cause to be maintained the quality control requirements of the certificate of approval.

§ 28.25 Changes or modifications of approved fuses; issuance of modification of certificate of approval.

(a) Each applicant may, if he desires to change any feature of an approved fuse, request a modification of the original certificate of approval issued by the Bureau for such fuse by filing an application for modification in accordance with the provisions of this section.

(b) Applications, including fees, shall be submitted as specified in § 28.10 for an original certificate of approval, with a request for a modification of the existing certificate to cover any proposed change.

(c) The application for modification, together with the examination, inspection, and tests results prescribed by § 28.10 shall be examined and evaluated by the Bureau to determine if the proposed modification meets the requirements of this part.

(d) If the proposed modification meets the requirements of this part, a formal modification of approval will be issued, accompanied, where necessary, by reproductions of revised approval labels or markings.

Subpart D—Quality Control

§ 28.30 Quality control plans; filing requirements.

As a part of each application for approval or modification of approval submitted pursuant to this part, each applicant shall file with the Bureau a proposed quality control plan which shall be designed to assure the quality of short-circuit protection provided by the fuse for which approval is sought.

§ 28.31 Quality control plans; contents.

(a) Each quality control plan shall contain provisions for the management of quality, including; (1) Requirements for the production of quality data and the use of quality control records; (2) control of engineering drawings, documentations, and changes; (3) control and calibration of measuring and test equipment; (4) control of purchased material to include incoming inspection; (5) lot identification, control of processes, manufacturing, fabrication, and assembly work conducted in the applicant's plant; (6) audit or final inspection of the completed product; and, (7) the organizational structure necessary to carry out these provisions.

(b) The sampling plan shall include inspection tests and sampling procedures

developed in accordance with Military Specification MIL–F–15160D, "Fuses; Instrument, Power, and Telephone" (which is hereby incorporated by reference and made a part hereof), Group A tests and Group B tests, except that the continuity and/or resistance characteristics of each fuse shall be tested. Military Specification MIL–F–15160D is available for examination at Approval and Testing, Health and Safety Technical Support Center, Bureau of Mines, 4800 Forbes Avenue, Pittsburgh, PA. Copies of the document may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

(c) The sampling procedure shall include a list of the characteristics to be tested by the applicant or his agent and shall include but not be limited to: (1) Continuity and/or resistance determination for each fuse; (2) carry current capability (not less than 110 percent of the rated current); and, (3) overload current interruption capability (not less than 135 percent of the rated current).

(d) The quality control inspection test method to be used by the applicant or his agent for each characteristic required to be tested shall be described in detail.

§ 28.32 Proposed quality control plans; approval by the Bureau.

(a) Each proposed quality control plan submitted in accordance with this subpart shall be reviewed by the Bureau to determine its effectiveness in insuring the quality of short-circuit protection provided by the fuse for which an approval is sought.

(b) If the Bureau determines that the proposed quality control plan submitted by the applicant will not insure adequate quality control, the Bureau shall require the applicant to modify the procedures and testing requirements of the plan prior to approval of the plan and issuance of any certificate of approval.

(c) Approved quality control plans shall constitute a part of and be incorporated into any certificate of approval issued by the Bureau, and compliance with such plans by the applicant shall be a condition of approval.

§ 28.33 Quality control test methods, equipment, and records; review by the Bureau; revocation of approval.

(a) The Bureau reserves the right to have its representatives inspect the applicant's quality control test methods, equipment, and records, and to interview any employee or agent of the applicant in regard to quality control test methods, equipment, and records.

(b) The Bureau reserves the right to revoke, for cause, any certificate of approval where it finds that the applicant's quality control test methods, equipment, or records do not ensure effective quality control over the fuse for which the approval was issued.

Subpart E—Construction, Performance, and Testing Requirements

§ 28.40 Construction and performance requirements; general.

(a) The Bureau shall issue approvals for fuses for use with direct current in providing short-circuit protection for trailing cables, when such fuses have met the minimum construction, performance, and testing requirements set forth in this subpart.

(b) Fuses submitted to the Bureau for approval will not be accepted unless they are designed on sound engineering and scientific principles, constructed of suitable materials, and evidence good workmanship.

(c) Fuses may be single-element or dual-element in type, however, they shall be capable of interrupting any direct current within a range from the ampere rating of the fuse under consideration for approval up to 20,000 amperes.

(d) The Bureau shall accept the fuse size and ampere rating as specified in the Underwriters Laboratories, Inc., standard for alternating current fuses (UL–198), which is hereby incorporated by reference and made a part hereof. This document is available for examination at Approval and Testing, Health and Safety Technical Support Center, Bureau of Mines, 4800 Forbes Avenue, Pittsburg, PA, and copies of the document are available from Underwriter's Laboratories, Inc., 161 Sixth Avenue, New York, NY 10013.

(e) Fuses shall be capable of completely interrupting a current within 30 milliseconds after initial current interruption, and shall not show any evidence of restriking after 30 milliseconds.

(f) The blown fuse shall show only superficial damage.

§ 28.41 Testing requirements; general.

(a) The open circuit voltage of the test circuit shall be 300 volts d.c., or 600 volts d.c., depending on the voltage rating of the fuse being tested.

(b) Time constant of the circuit (defined as $T=L/R$, where T is the time in seconds, L is the inductance in henries, and R is the resistance in ohms) shall be as follows:

(1) For 10,000 amperes and greater currents, $T=0.016$ second or more;

(2) For 1,000 amperes to 10,000 amperes, $T=0.008$ second or more;

(3) For 100 amperes to 1,000 amperes, $T=0.006$ second or more; and

(4) For less than 100 amperes, $T=0.002$ seconds or more.

(c) Test currents shall be as follows:

(1) 200 percent of rated current for fuses having 200 or less ampere rating, or 300 percent of rated current for fuses having greater than 200 ampere rating;

(2) 900 percent of rated current;

(3) 10,000 amperes; and

(4) 20,000 amperes.

(d) The voltage shall continue to be applied for at least 30 seconds after completion of circuit interruption.

(e) Five fuses of each case size shall be tested at each test current specified in paragraph (c) of this section, with the value of the fuse being the maximum value for the case size.

(f) Three of each lot of five fuses shall be preconditioned at 95±5 percent R H for not less than 5 days immediately prior to testing; and the other two fuses of each lot of five shall be preconditioned by heating to 90° C. for 24 hours, and tested within 1 hour after removal from the preconditioning chamber.

(g) At least 3 of each lot of five fuses shall be tested in a fuse holder of a trolley-tap type, and the fuse holder shall remain intact and shall readily accept and retain a replacement fuse.

[FR Doc.72–5671 Filed 4–14–72;8:45 am]

PART 29—PORTABLE COAL DUST/ROCK DUST ANALYZERS, AND CONTINUOUS DUTY, WARNING LIGHT, PORTABLE METHANE DETECTORS FOR USE IN COAL MINES

Pursuant to the authority vested in the Secretary of the Interior under section 508 of the Federal Coal Mine Health and Safety Act of 1969 (30 U.S.C. 957), and 36 Stat. 369, as amended, 37 Stat. 681, 30 U.S.C. 3, 5, and 7, there was published in the FEDERAL REGISTER for August 5, 1971 (36 F.R. 14450), a notice of proposed rule making which prescribed requirements for testing and approval by the Bureau of Mines of portable coal dust/rock dust samplers, and continuous duty, warning light, portable methane detectors for use in coal mines.

Interested persons were afforded a period of 45 days from the date of publication of the notice in which to submit written comments, suggestions, and objections to the proposed requirements. All comments, suggestions, and objections were given careful and thorough consideration.

Some of the requirements were revised as suggested and in other instances revisions were made in view of the comments received. Some of the more significant revisions are as follows: (1) The field testing requirements (§§ 29.61 (e) and (f) and 29.76 (b) and (c)) specify the period of time and the manner in which field testing will be conducted; (2) Tables A and B have been revised to be more precise; (3) examples of causes which may result in revocation of the certificate of approval have been specified; (4) the application procedures have been revised so as to make clear that the Bureau will test soundly designed and constructed prototypes, but may require resubmission of a production model for additional testing prior to issuance of a certificate of approval (§§ 29.11(e) and 29.30 (c) and (d)); and (5) references, in Subparts G and H, to Part 22 of this Title 30 (Bureau of Mines Schedule 8C) have been deleted in favor of repeating the reference requirements in this Part 29 for the facility of users. Furthermore since the instrument designated as a portable coal dust/rock dust

sampler in the notice of proposed rulemaking is intended to be utilized to accurately measure the incombustible content of combined coal dust, rock dust, and other mine dust, the term "analyzer" has been substituted for the term "sampler".

Part 29—Portable Coal Dust-Rock Dust Analyzers, and Continuous Duty, Warning Light, Portable Methane Detectors for Use in Coal Mines—of Subchapter D, Chapter I, Title 30, Code of Federal Regulations, as set forth below, is herewith promulgated and shall become effective 60 days following publication in the FEDERAL REGISTER.

W. T. PECORA,
Acting Secretary of the Interior.

APRIL 10, 1972.

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Table C—Maximum and Minimum Limits of Error for Accessory Quantitative Meters Installed on Continuous Duty, Warning Light, Portable Methane Detectors.

AUTHORITY: The provisions of this Part 29 issued under sec. 508 of the Federal Coal Mine Health and Safety Act of 1969 (30 U.S.C. 801, 83 Stat. 742), and 36 Stat. 369, as amended, 37 Stat. 681, 30 U.S.C. 3, 5, and 7.

Subpart A—General Provisions

§ 29.1 Purpose.

The purpose of the regulations contained in this Part 29 is: (a) To establish procedures and prescribe requirements which must be met in filing applications for the approval of portable coal dust/rock dust analyzers for use in measuring the incombustible content of mine dusts, and the approval of continuous duty, warning light, portable methane detectors for use in providing a visual signal of the presence of a methane-air mixture having a methane concentration of 1.0 percent ±0.2 percent, or the approval of changes and modifications of approved portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors; (b) to specify minimum performance requirements and to prescribe methods to be employed in conducting inspections, examinations, and tests to determine the effectiveness of these instruments; and (c) to provide for the issuance of certificates of approval or modifications of certificates of approval for portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors which have met the minimum requirements for performance set forth in this part.

§ 29.2 Approved portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors.

On and after the effective date of this part, portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors shall be considered to be approved for use in coal mines where such instruments are: (a) The same in all respects as those portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors which have been approved as meeting the minimum requirements for performance prescribed in this Part 29; and (b) maintained in an approved condition.

§ 29.3 Use and maintenance of approved portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors.

Approved portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors shall be operated and maintained in accordance with the specifications prescribed by the manufacturer of such instruments, and in accordance with the applicable provisions of Parts 75 and 77, Subchapter O of this chapter.

§ 29.4 Definitions.

As used in this part—

(a) "Applicant" means an individual, partnership, company, corporation, association, or other organization that designs, manufactures, assembles, or fabricates, or controls the design, manufacture, assembly, or fabrication of a portable coal dust/rock dust analyzer or a continuous duty, warning light, portable methane detector, and who seeks to obtain a certificate of approval for such analyzer or detector.

(b) "Approval" means a certificate or formal document issued by the Bureau stating that an individual portable coal dust/rock dust analyzer or an individual continuous duty, warning light, portable methane detector has met the applicable minimum requirements of this Part 29, and that the applicant is authorized to use and attach an approval label or plate on any portable coal dust/rock dust analyzer or continuous duty, warning light, portable methane detector manufactured, fabricated, or assembled in conformance with the plans and specifications upon which the approval was based, as evidence of such approval.

(c) "Approved" means conforming to the minimum requirements of this Part 29.

(d) "Bureau" means the U.S. Bureau of Mines, Department of the Interior.

(e) "Coal dust" means particles of coal that can pass a No. 20 sieve.

(f) "Coal Mine" means an area of land and all structures, facilities, machinery, tools, equipment, shafts, slopes, tunnels, excavations, and other property, real or personal, placed upon, under, or above the surface of such land by any person, used in, or to be used in, or resulting from, the work of extracting in such area bituminous coal, lignite, or anthracite from its natural deposits in the earth by any means or method, and the work of preparing the coal so extracted, and includes custom coal preparation facilities.

(g) "Coal mine dust" means solid particles with sizes ranging from submicroscopic to microscopic, including but not limited to coal dust and rock dust.

(h) "Continuous duty, warning light, portable methane detector" means a portable, self-contained instrument, containing a red warning light which flashes in the presence of methane-air mixtures having methane concentrations of 1.0 percent±0.2 percent.

(i) "Portable coal dust/rock dust analyzer" means a portable, self-contained instrument, capable of indicating the incombustible content of coal mine dust over a range of from 50 percent to 100 percent incombustible.

(j) "Rock dust" means pulverized limestone, dolomite, gypsum, anhydrite, shale, adobe, or other inert material, preferably light colored, 100 per centum of which will pass through a sieve having 20 meshes per linear inch and 70 per centum or more of which will pass through a sieve having 200 meshes per linear inch; the particles of which when wetted and dried will not cohere to form a cake which will not be dispersed into separate particles by a light blast of air; and which does not contain more than 5 per centum of combustible matter or more than a total of 4 per centum of free and combined silica (SiO_2), or, where the Secretary finds that such silica concentrations are not available, which does not contain more than 5 per centum of free and combined silica.

(k) "Work of preparing the coal" means the breaking, crushing, sizing, cleaning, washing, drying, mixing, storing, and loading of bituminous coal, lignite, or anthracite, and such other work of preparing such coal as is usually done by the operator of the coal mine.

Subpart B—Application for Approval

§ 29.10 Application procedures.

(a) Inspection, examination, and testing leading to the approval of portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors shall be undertaken by the Bureau only pursuant to written applications which meet the minimum requirements set forth in this Subpart B.

(b) Applications shall be submitted in duplicate to Approval and Testing, Bureau of Mines, 4800 Forbes Avenue, Pittsburgh, PA 15213, and shall be accompanied by a check, bank draft, or money order in the amount specified in Subpart C of this part payable to the order of the U.S. Bureau of Mines.

(c) Except as provided in §§ 29.54, 29.61(e), and 29.76(b), the examination, inspection, and testing of all portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors shall be conducted at Approval and Testing, Bureau of Mines, Pittsburgh, Pa. 15213, or at the Bruceton, Pa. facility of the Health and Safety Technical Support Center.

(d) Applicants, manufacturers, or their representatives may visit or communicate with Approval and Testing in order to discuss the requirements for approval of any portable coal dust/rock dust analyzer, or continuous duty, warning light, portable methane detector or the proposed designs thereof. No charge shall be made for such consultation and no written report shall be issued by the Bureau as a result of such consultation.

§ 29.11 Contents of application.

(a) Each application for approval shall contain a complete written description, including operating instructions, of the analyzer or detector for which approval is requested together with a set of drawings and specifications (and lists thereof) showing full details of construction of the instrument and of the materials used. Drawings and specifications (and lists thereof) shall be submitted in duplicate.

(b) Drawings shall be titled, numbered, and dated; any revision dates shall be shown on the drawings, and the purpose of each revision being sought shall be shown on the drawing or described on an attachment to the drawing to which it applies.

(c) Each application for approval shall contain a proposed plan for quality control which meets the minimum requirements set forth in Subpart E of this part.

(d) Each application shall contain a statement that the analyzer or detector has been pretested by the applicant as prescribed in § 29.54, and shall include the results of such tests.

(e) Each application for approval shall contain a statement that the analyzer or detector and component parts submitted for approval are either (1) prototypes, or (2) made on regular production tooling, with no operation included which will not be incorporated in regular production processing.

(f) Where any form of radioactivity is employed in the analyzer or detector, the applicant shall submit:

(1) Evidence of compliance with all State regulations with respect to radiation and the use of radioactive materials; and

(2) Evidence of compliance with the requirements set forth in Title 10, Code of Federal Regulations.

§ 29.12 Delivery of analyzers and detectors by applicant; requirements.

(a) Each applicant shall, when an application is filed pursuant to § 29.10 deliver at his own expense, four assembled analyzers or detectors, less the radioactive source, to Approval and Testing, Bureau of Mines, Pittsburgh, Pa. 15213. The radioactive source shall be delivered and inserted in the instrument by the applicant following testing of the electrical components of such instrument.

(b) Analyzers, detectors, and component parts submitted for approval must be made from materials specified in the application.

(c) One completely assembled analyzer or detector approved under the provisions of this part may be retained by the Bureau as a laboratory exhibit; the remaining instruments will be returned to the applicant at his own expense, upon written request within 30 days after notice of approval. If no such request is made, the instruments will be disposed of by the Bureau in such manner as it deems appropriate.

(d) Where an analyzer or detector fails to meet the requirements for approval set forth in this part, all instruments and components delivered intact in accordance with this section will be returned to the applicant at his own expense, upon written request within 30 days after notice of disapproval. If no such request is made, the instruments will be disposed of by the Bureau in such manner as it deems appropriate.

Subpart C—Fees

§ 29.20 Examination, inspection, and testing of portable coal dust/rock dust analyzers, and continuous duty, warning light, portable methane detectors; fees.

Except as provided in § 29.21, the following fees shall be charged by the Bureau for the examination, inspection, and testing of portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors:

(a) Examining and recording drawings and specifications prior to inspection, examination and testing	$110
(b) Intrinsic-safety investigation and test under Part 18 of this chapter (Bureau of Mines Schedule 2G)	105
(c) Inspection and explosion testing	175

§ 29.21 Additional fees; payment by applicant prior to approval.

(a) The Bureau reserves the right to conduct any examination, inspection, or test it deems necessary to determine the quality and effectiveness of any analyzer, detector, or component, and to assess the cost of such examinations, inspections, or tests against the applicant prior to the issuance of any approval for the instrument examined, inspected or tested.

(b) The fees charged for the additional examination, inspection, and testing of analyzers, detectors, and components shall be at the rate of $100 per day for each man-day required to be expended by the Bureau.

(c) Upon completion of all examinations, inspections, and tests of analyzers, detectors, and components, the Bureau shall advise the applicant in writing of the total cost assessed and the additional amount, if any, which must be paid to the Bureau as a condition of approval.

(d) The Bureau shall refund any overpayment to the applicant upon the issuance of any approval or notice of disapproval.

Subpart D—Approval and Disapproval

§ 29.30 Certificates of approval; scope of approval.

(a) The Bureau shall issue certificates of approval pursuant to the provisions of this subpart only for individual, completely assembled portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors which have been examined, inspected, and tested, and which meet the minimum requirements set forth in Subparts G and H, as applicable.

(b) The Bureau shall not issue an informal notice of approval. However, if the application for approval, submitted in accordance with § 29.11, states that the submitted analyzer, detector, and component parts are only prototypes, the Bureau will examine, inspect, and test such prototype analyzer, detector, and component parts in accordance with the provisions of this Part 29. If, upon completion of such examinations, inspections and tests, it is found that the prototype meets the minimum requirements set forth in this part, the Bureau may inform the applicant, in writing, of the results of the examinations, inspections, and tests, and may require him to resubmit analyzers, detectors, and component parts, as applicable, made on regular production tooling, with no operations included which will not be incorporated in regular production processing, for further examination, inspection, and testing, prior to issuance of the certificate of approval.

(c) Applicants required to resubmit analyzers, detectors, and component parts made on regular production tooling, with no operation included which will not be incorporated in regular production processing, shall be charged fees in accordance with Subpart C of this part.

§ 29.31 Certificates of approval; contents.

(a) The certificate of approval shall contain a description of the analyzer or detector for which it is issued as provided in this part.

(b) The certificate of approval shall specifically set forth any restrictions or limitations, if any, on use of the instrument.

(c) Each certificate of approval shall be accompanied by the drawings and specifications (and lists thereof) submitted by the applicant in accordance with § 29.11. These drawings and specifications shall be incorporated by reference in the certificate of approval and shall be maintained by the applicant. The drawings and specifications listed in each certificate of approval shall set forth in detail the design and construction requirements which shall be met by the applicant during commercial production of the instrument.

(d) Each certificate of approval, shall be accompanied by a reproduction of the approval label design to be employed by the applicant with each approved instrument as provided in § 29.33.

(e) No test data or specific laboratory findings will accompany any certificate of approval, however, the Bureau will release pertinent test data and specific findings upon written request by the applicant, or when required by statute or regulation.

(f) Each certificate of approval shall also contain the approved quality control plan as specified in § 29.42.

§ 29.32 Notice of disapproval.

(a) If, upon the completion of the examinations, inspections, and tests required to be conducted in accordance with the provisions of this part, it is found that the analyzer or detector does not meet the minimum requirements set forth in this part, the Bureau shall issue a written notice of disapproval to the applicant.

(b) Each notice of disapproval shall be accompanied by all pertinent data or findings with respect to the defects of the instrument for which approval was sought with a view to the possible correction of any such defects.

(c) The Bureau shall not disclose, except to the applicant upon written request or when required by statute or regulation, any data, findings or other information with respect to any instrument for which a notice of disapproval is issued.

§ 29.33 Approval labels and markings; approval of contents; use.

(a) Upon receipt of a certificate of approval, the applicant shall submit to the Bureau, for approval of contents, samples or full-scale reproductions of approval plates, labels, and markings and a sketch or description of the method of application and position on the instrument, together with instructions for the use and maintenance of the instrument.

(b) Approval labels shall bear the seal of the U.S. Bureau of Mines, the applicant's name and address, the restrictions or limitations placed upon the use of the instrument by the Bureau, an approval number assigned by the Bureau, and other information necessary for identification of the instrument.

(c) The Bureau shall, where necessary, notify the applicant when additional labels, markings or instructions will be required.

(d) Approval labels and markings shall only be used by the applicant to whom they were issued.

(e) Legible reproductions or abbreviated forms of the label approved by the Bureau for use on each analyzer and detector shall be affixed, attached to, or printed on the instrument at a location where it can be easily seen.

(f) The use of any Bureau approval label obligates the applicant to whom it is issued to maintain or cause to be maintained the approved quality control sampling schedule and the acceptable quality level for each characteristic tested, and to guarantee that the instrument is manufactured according to the drawings and specifications upon which the certificate of approval is based.

(g) Each analyzer and detector shall be labeled distinctly to show the name of the applicant, and the name and letters or numbers by which the instrument is designated for trade purposes, and the serial number or approximate date of manufacture.

§ 29.34 Revocation of certificates of approval.

The Bureau reserves the right to revoke, for cause, any certificate of approval issued pursuant to the provisions of this part. Such causes include, but are not limited to, misuse of approval labels and markings, misleading advertising, violations of section 109(e) of the Federal Coal Mine Health and Safety Act of 1969 (30 U.S.C. 819(e)), and failure to maintain or cause to be maintained the quality control requirements of the certificate of approval.

§ 29.35 Changes or modification of approved analyzers and detectors; issuance of modification of certificate of approval.

(a) Each applicant may, if he desires to change any feature of an approved analyzer or detector, request a modification of the original certificate of approval issued by the Bureau for such instrument by filing an application for such modification in accordance with the provisions of this section.

(b) Applications shall be submitted as for an original certificate of approval, with a request for a modification of the existing certificate to cover any proposed change.

(c) The application shall be accompanied by appropriate drawings and specifications, and by a proposed quality control plan which meets the requirements of Subpart E of this part.

(d) The application for modification, together with the accompanying material, shall be examined by the Bureau to determine whether testing will be required.

(e) The Bureau shall inform the applicant of the fee required for any additional testing and the applicant will be charged for the actual cost of any examination, inspection, or test required, and such fees shall be submitted in accordance with the provisions of Subpart C of this part.

(f) If the proposed change or modification meets the requirements of this part, a formal certificate of modification will be issued, accompanied, where necessary, by a list of new and revised drawings and specifications covering the change(s) and reproductions of revised approval labels.

§ 29.36 Delivery of changed or modified approved analyzer or detector.

An approved analyzer or detector for which a formal certificate of modification has been issued shall be delivered by the applicant to the Bureau of Mines, Approval and Testing, 4800 Forbes Avenue, Pittsburgh, PA 15213, as soon as it is commercially produced.

Subpart E—Quality Control

§ 29.40 Quality control plans; filing requirements.

As a part of each application for approval or modification of approval submitted pursuant to this part, each applicant shall file with the Bureau a proposed quality control plan which shall be designed to assure the quality of the instrument for which approval is sought.

§ 29.41 Quality control plans; contents.

(a) Each quality control plan shall contain provisions for the management of quality, including: (1) Requirements for the production of quality data and the use of quality control records; (2) control of engineering drawings, documentations, and changes; (3) control and calibration of measuring and test

equipment; (4) control of purchased material to include incoming inspection; (5) lot identification, control of processes, manufacturing, fabrication, and assembly work conducted in the applicant's plant; (6) audit or final inspection of the completed product; and (7) the organizational structure necessary to carry out these provisions.

(b) Each provision for final inspection in the quality control plan shall include a procedure for the selection of a sample of the end product and the functional components thereof for testing, in accordance with procedures set forth in Military Standard MIL–STD–105D, "Sampling Procedures and Tables for Inspection by Attributes," or Military Standard MIL–STD–414, "Sampling Procedures and Tables for Inspection by Variables for Percent Defective," or an approved equivalent sampling procedure, or an approved combination of sampling procedures. Military Standard MIL–STD–105D, "Sampling Procedures and Tables for Inspection by Attributes," and Military Standard MIL–STD–414, "Sampling Procedures and Tables for Inspection by Variables for Percent Defective" are hereby incorporated by reference and made a part hereof. These documents are available for examination at Approval and Testing, Health and Safety Technical Support Center, Bureau of Mines, 4800 Forbes Avenue, Pittsburgh, PA, and may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

(c) The sampling procedure shall include a list of the characteristics to be tested by the applicant or his agent.

(d) The characteristics listed in accordance with paragraph (c) of this section shall be classified according to the potential effect of such defect and grouped into the following classes:

(1) *Critical.* A defect that judgment and experience indicate is likely to result in hazardous or unsafe conditions for individuals using, maintaining, or depending upon the product; or a defect that judgment and experience indicate is likely to prevent performance of the function of the end product.

(2) *Major.* A defect, other than critical that is likely to result in failure, or to reduce materially the usability of the unit or product for its intended purpose.

(3) *Minor.* A defect that is not likely to materially reduce the utility of the instrument for its intended purpose, or a defect that is a departure from established standards and has little bearing on the effective use or operation of the instrument.

(e) The quality control inspection test method to be used by the applicant or his agent for each characteristic required to be tested shall be described in detail.

(f) Each item manufactured shall be 100 percent inspected for defects in all critical characteristics and all defective items shall be rejected.

(g) The Acceptable Quality Level (AQL) for each major or minor defect so classified by the applicant shall be:

(1) Major—1.0 percent;

(2) Minor—4.0 percent.

(h) Except as provided in paragraph (i) of this section, inspection level II as described in MIL–STD–105D, or inspection level IV as described in MIL–STD–414, shall be used for major and minor characteristics and 100 percent inspection for critical characteristics.

(i) Subject to the approval of the Bureau, where the quality control plan provisions for raw material, processes, manufacturing, and fabrication inspection are adequate to ensure control of finished article quality, destructive testing may be conducted at a lower level of inspection than that specified in paragraph (h) of this section.

§ 29.42 Proposed quality control plans; approval by the Bureau.

(a) Each proposed quality control plan submitted in accordance with this subpart shall be reviewed by the Bureau to determine its effectiveness in ensuring the utility of the instrument for which an approval is sought.

(b) If the Bureau determines that the proposed quality control plan submitted by the applicant will not insure adequate quality control, the Bureau shall require the applicant to modify the procedures and testing requirements of the plan prior to approval of the plan and issuance of any certificate of approval.

(c) Approved quality control plans shall constitute a part of and be incorporated into any certificate of approval issued by the Bureau, and compliance with such plans by the applicant shall be a condition of approval.

§ 29.43 Quality control records; review by the Bureau; revocation of approval.

(a) The applicant shall keep quality control inspection records sufficient to carry out the procedures required in MIL–STD–105D or MIL–STD–414, or an approved equivalent sampling procedure.

(b) The Bureau reserves the right to have its representatives inspect the applicant's quality control test methods, equipment, and records, and to interview any employee or agent of the applicant in regard to quality control test methods, equipment, and records.

(c) The Bureau reserves the right to revoke, for cause, any certificate of approval where it finds that the applicant's quality control test methods, equipment, or records do not ensure effective quality control over the instrument for which the approval was issued.

Subpart F—General Construction and Performance Requirements

§ 29.50 Construction and performance requirements; general.

(a) The Bureau shall issue approvals for portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors which have met the applicable minimum requirements set forth in this Part 29.

(b) In addition to the types of analyzers and detectors described in Subparts G and H of this part, the Bureau will issue approvals for other portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors subject to such additional requirements as may be imposed in accordance with § 29.53.

§ 29.51 General construction requirements.

Portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors will not be accepted by the Bureau for examination, inspection, and testing unless they are designed on sound engineering and scientific principles, constructed of suitable materials, and evidence good workmanship.

§ 29.52 Component parts; minimum requirements.

(a) The components of each instrument approved by the Bureau for use where permissibility is required shall meet the requirements for permissibility and intrinsic safety set forth in Part 18, Subchapter D of this chapter (Bureau of Mines Schedule 2G).

(b) The components of each instrument shall be:

(1) Designed and constructed to prevent creation of any hazard to the user; and

(2) Assembled to permit easy access for inspection, cleaning, and repair of functional parts.

(c) Replacements parts shall be constructed to maintain the effectiveness of the instrument.

§ 29.53 Test requirements; general.

(a) Each instrument and its components shall, when tested by the applicant and the Bureau, meet the applicable performance and test requirements set forth in Subparts G and H of this part.

(b) In addition to the minimum requirements set forth in Subparts G and H of this part the Bureau reserves the right to require, as a further condition of approval, any additional or other minimum requirements it deems necessary to establish the quality, effectiveness, and safety of any instrument.

(c) Where it is determined after receipt of an application that additional or other minimum requirements will be required for approval, the Bureau will notify the applicant in writing of the additional or other minimum requirements, and necessary examinations, inspections, and tests, stating generally its reasons for such requirements, examinations, inspections or tests.

§ 29.54 Pretesting by applicant.

(a) Prior to any application for approval or modification of approval, the applicant shall conduct, or cause to be conducted, examinations, inspections, and tests of analyzer or detector performance which are equal to or exceed the severity of those prescribed in this part.

(b) With the application, the applicant shall provide a statement to the Bureau showing the types and results of the examinations, inspections, and

tests performed as required under paragraph (a) of this section and state that the analyzer or detector meets the minimum requirements of Subpart G or H of this part, as applicable. Complete examination, inspection and test data shall be retained on file by the applicant and be submitted, upon request, to the Bureau.

(c) The Bureau may, upon written request by the applicant, provide drawings and descriptions of its test equipment and otherwise assist the applicant in establishing a test laboratory or securing the services of a testing agency.

§ 29.55 Conduct of examinations, inspections, and tests by the Bureau; assistance by applicants; observers; recorded data; public demonstrations.

(a) All examinations, inspections, and tests conducted by the Bureau pursuant to Subparts G and H of this part will be under the sole direction and control of the Bureau.

(b) The Bureau may as a condition of approval, require the assistance of the applicant or agents of the applicant during the assembly, disassembly, or preparation of any instrument or instrument component prior to testing or in the operation of such instrument during testing.

(c) Only Bureau personnel, persons assisting the Bureau pursuant to paragraph (b) of this section, and such other persons as are requested by the Bureau or the applicant to be observers, shall be present during any examination, inspection or test conducted prior to the issuance of an approval by the Bureau for the instrument under consideration.

(d) The Bureau shall hold as confidential any analyses, drawings, specifications, or materials submitted by the applicant and shall not disclose any principles or patentable features of such equipment, except as required by statute or regulation.

(e) As a condition of each approval issued for any analyzer or detector, the Bureau reserves the right, following the issuance of such approval, to conduct such public tests and demonstrations of the approved instrument as it deems appropriate.

§ 29.56 Withdrawal of applications; refund of fees.

(a) Any applicant may, upon a written request submitted to the Bureau, withdraw any application for approval of any analyzer or detector.

(b) Upon receipt of a written request for the withdrawal of an application, the Bureau shall determine the total amount due for services already performed during the course of any examinations, inspections, or tests conducted pursuant to such application. The total amount due shall be determined in accordance with the provisions of §§ 29.20 and 29.21 and assessed against the fees submitted by the applicant. If the total amount assessed is less than the fees submitted, the Bureau shall refund the balance together with a statement of the charges made for services rendered.

Subpart G—Portable Coal Dust/Rock Dust Analyzers; Performance and Testing Requirements

§ 29.60 Minimum performance requirements.

(a) Portable coal dust/rock dust analyzers shall be self-contained units, practical in operation, portable, and suitable for service in underground coal mines.

(b) The analyzer shall be equipped with a quantitative indicating device that is capable of indicating the incombustible content of coal mine dusts over the range of from 50 percent to 100 percent incombustible.

(c) Analyzers equipped with batteries shall be constructed so that when such batteries are filled, electrolyte will not spill during use.

(d) Battery containers shall be made of corrosion resistant material.

§ 29.61 Testing requirements.

(a) Portable coal dust/rock dust analyzers shall be tested to ensure that they meet the minimum construction and performance requirements set forth in §§ 29.51, 29.52, and 29.60.

(b) The sampling materials listed in Table A shall be used in testing the capability of the indicating device of the portable coal dust/rock dust analyzer to measure incombustible content as specified in § 29.60(b).

(c) The indicating device of the analyzer being tested shall be within ±3 percent of the chemically determined incombustible content for 80 percent of the standard samples and inspector's samples listed in Table B.

(d) In preparing sampling materials for testing, all sampling materials shall be:

(1) Air equilibrated;

(2) Carefully mixed to minimize segregation or degradation;

(3) Stored in moisture- and air-tight containers to prevent oxidation and drying; and,

(4) Analyzed for percent incombustible content within ±1 percent, by chemical analysis.

(e) In order to determine the reliability and utility of the analyzer, personnel of the Bureau shall field test the instrument for 1 month in various underground coal mines, in accordance with the applicant's operating and maintenance instructions.

(f) The Bureau may conduct any additional field testing it deems necessary.

TABLE A

SPECIFICATION FOR SAMPLING MATERIALS USED FOR COAL DUST/ROCK DUST ANALYZER TESTING (PERCENTAGES BY WEIGHT; PARTICLE SIZE ±2 PERCENT)

1. Bruceton mine coal, Pittsburgh Seam, 6 to 8 percent ash, 100 percent through U.S. No. 100 sieve, 70 percent through U.S. No. 200 sieve.
2. Pocahontas low volatile, 5 to 6 percent ash, less than 0.7 percent total sulfur, 70 percent through U.S. No. 200 sieve.
3. Pittsburgh Seam, run-of-mine, 27 to 32 percent ash, 1.5 to 2.5 percent sulfur, 100 percent through U.S. No. 20 sieve and 20 percent through U.S. No. 200 sieve.
4. Pyrite, coal-derived, 90 percent or better FeS_2, 70 percent through U.S. No. 200 sieve.
5. $MgCO_3$, analytical grade, powdered, 70 percent through U.S. No. 200 sieve.
6. Ash, mineral matter content of 50 to 80 percent from preparation plant refuse, less than 5 percent pyrite, 70 percent through U.S. No. 200 sieve.
7. Limestone, 99 percent $CaCO_3$, 70 percent through U.S. No. 200 sieve.
8. Dolomite, approximately 41 percent $MgCO_3$, 70 percent through U.S. No 200 sieve.
9. Gypsum, approximately 45 percent $CaSO_4 \cdot 2H_2O$, 70 percent through U.S. No. 200 sieve.
10. Traction sand, (Quartz) 100 percent through U.S. No. 20 sieve.
11. Flammable hydraulic oil (petroleum based).

TABLE B

SPECIFICATIONS FOR STANDARD SAMPLES AND INSPECTORS' SAMPLES USED FOR COAL DUST/ROCK DUST ANALYZER TESTING (PERCENTAGES BY WEIGHT WITH ALLOWABLE VARIATIONS OF ±2 PERCENT)

Standard Samples

1. Bruceton coal and limestone to form 55, 65, 75, and 85 percent incombustible (ash and limestone plus 0.3 to 0.6 percent inherent moisture).
2. Bruceton coal and dolomite to 55, 65, 75, and 85 percent incombustibles.
3. Bruceton coal and gypsum to 55, 65, 75, and 85 percent incombustibles.
4. Pocahontas coal and limestone to 55, 65, 75, and 85 percent incombustibles.
5. Pocahontas coal and dolomite to 55, 65, 75, and 85 percent incombustibles.
6. Pittsburgh seam coal and limestone to 55, 65, 75, and 85 percent incombustibles.
7. Pittsburgh seam coal and dolomite to 55, 65, 75, and 85 percent incombustibles.
8. Moisture added to sample 6 of 65 percent incombustibles resulting in 70 percent incombustibles.
9. Moisture added to sample 6 of 55 percent incombustibles resulting in 65 percent total incumbustibles.
10. Pyrite added to sample 1 of 55 percent resulting in 56 percent incombustibles.
11. Pyrite added to sample 4 of 65 percent resulting in 66 percent incombustibles.
12. Pyrite added to sample 6 of 75 percent resulting in 76 percent incombustibles.
13. $MgCo_3$ added to sample 1 of 55 percent resulting in 58 percent incombustibles.
14. $MgCo_3$ added to sample 2 of 65 percent resulting in 68 percent incombustibles.
15. $MgCO_3$ added to sample 3 of 70 percent resulting in 78 percent incombustibles.
16. Ash added to sample 6 of 55 percent resulting in 60 percent incombustibles.
17. Ash added to sample 6 of 55 percent resulting in 70 percent incombustibles.
18. A mixture consisting of 30 percent ash, 45 percent Pittsburgh coal, and 25 percent limestone.
19. Sand added to sample 1 of 55 percent resulting in 60 percent incombustibles.
20. Sand added to sample 1 of 55 percent resulting in 65 percent incombustibles.
21. Sand added to sample 1 of 55 percent resulting in 75 percent incombustibles.
22. Hydraulic oil added to sample 1 of 55 percent resulting in 50 percent incombustibles.
23. Hydraulic oil added to sample 1 of 55 percent resulting in 45 percent incombustibles.

Inspectors' Samples

1. A group of 25 samples shall be chosen from samples taken by Bureau inspectors during their regular mine surveys of rock dust sufficiency.
2. The type of rock dust and coal present in the mine from which such samples were taken shall be made available for purposes of calibration.

3. Where the quantity of individual samples is insufficient to supply the sample volume required for testing, composite samples of adequate volume will be used.

Subpart H—Continuous Duty, Warning Light, Portable Methane Detectors; Performance and Testing Requirements

§ 29.70 Minimum performance requirements.

(a) Continuous duty, warning light, portable methane detectors shall be self-contained units, practical in operation, portable and suitable for service in underground coal mines.

(b) The detector shall be equipped with an indicating device that contains one or more warning lights designed and constructed to flash in the presence of a methane-air mixture having a methane concentration of 1 percent ±0.2 percent.

(c) Detectors equipped with batteries shall be constructed so that when such batteries are filled, electrolyte will not spill during use.

(d) Battery containers shall be made of corrosion-resistant material.

§ 29.71 Warning light; performance requirements.

(a) Warning lights contained in the indicating devices of detectors shall:

(1) Be visible within the normal visual field of miners working in the vicinity of the detector;

(2) If incandescent, employ lamps of no less than 0.2 candlepower; or

(3) If light-emitting diodes (LED's), have sufficient intensity to be discernible in the working place of an underground coal mine; and,

(4) Be red in color.

(b) The flash rate of the warning light shall be approximately one flash per second, and the duty cycle shall be sufficiently long to attract attention.

§ 29.72 Accessory quantitative meter; minimum requirements.

(a) In addition to the warning lights described in § 29.71, an accessory meter may be installed in a continuous duty, warning light, portable methane detector, to serve as a quantitative indicator of the presence of methane.

(b) Where an accessory quantitative meter is installed on a detector, it shall meet the following minimum requirements for performance and accuracy:

(1) Accessory quantitative meters shall indicate the presence of methane concentrations as low as 0.25 percent and shall have upper scale limits of 2 percent to 4 percent methane. The indications for these percentages shall be within the limits of error specified in Table C;

(2) Accessory quantitative meters shall make no less than 30 determinations for the presence of methane without replacement of any component part, and no less than 15 such determinations prior to recharging of the battery or other power source; and,

(3) The scale of accessory quantitative meters shall not be subdivided into smaller divisions than is warranted by the general accuracy of the meter.

§ 29.73 Operative period.

Detectors shall be tested to ensure that they operate effectively over a 10-hour period (a) without requiring battery replacement or recharging, and (b) without loss of initial accuracy.

§ 29.74 Calibration adaptors.

(a) Each detector shall be equipped with an adaptor that checks the overall response of the instrument to a premixed, methane-air mixture, having a concentration of not less than 1 percent or more than 3 percent, by volume.

(b) Adaptors shall be compatible with methane calibrating kits marketed for methane monitor calibration.

§ 29.75 Visual indicator device.

Each detector shall be equipped with a device capable of giving a visual indication of the operative condition of the battery and the electrical circuitry employed in the detector.

§ 29.76 Testing requirements.

(a) Continuous duty, warning light, portable methane detectors shall be tested to ensure that they meet the minimum construction and performance requirements set forth in §§ 29.51, 29.52, 29.70, 29.71, 29.73, 29.74, and 29.75.

(b) Accessory quantitative meters shall be tested at several percentages within the limits of error specified in Table C, and at temperatures ranging from 50° and 70° F., with 5° increments. Ten tests shall be made at each percentage selected, and neither the average of the 10 tests, nor more than two tests for each percentage, shall exceed the limits of error specified in Table C.

(c) In order to determine the reliability and utility of the detector, personnel of the Bureau shall field test the instrument for 1 month in various underground coal mines, in accordance with the applicant's operating and maintenance instructions.

(d) The Bureau may conduct any additional field testing it deems necessary.

TABLE C

MAXIMUM AND MINIMUM LIMITS OF ERROR FOR ACCESSORY QUANTITATIVE METERS INSTALLED ON CONTINUOUS DUTY, WARNING LIGHT, PORTABLE METHANE DETECTORS

Percent methane	Minimum limit of error—percent methane	Maximum limit of error—percent methane
0.25	0.10	0.40
0.50	0.35	0.65
1.00	0.80	1.20
2.00	1.80	2.20
3.00	2.70	3.30
4.00	3.70	4.30

[FR Doc.72-5670 Filed 4-14-72;8:45 am]

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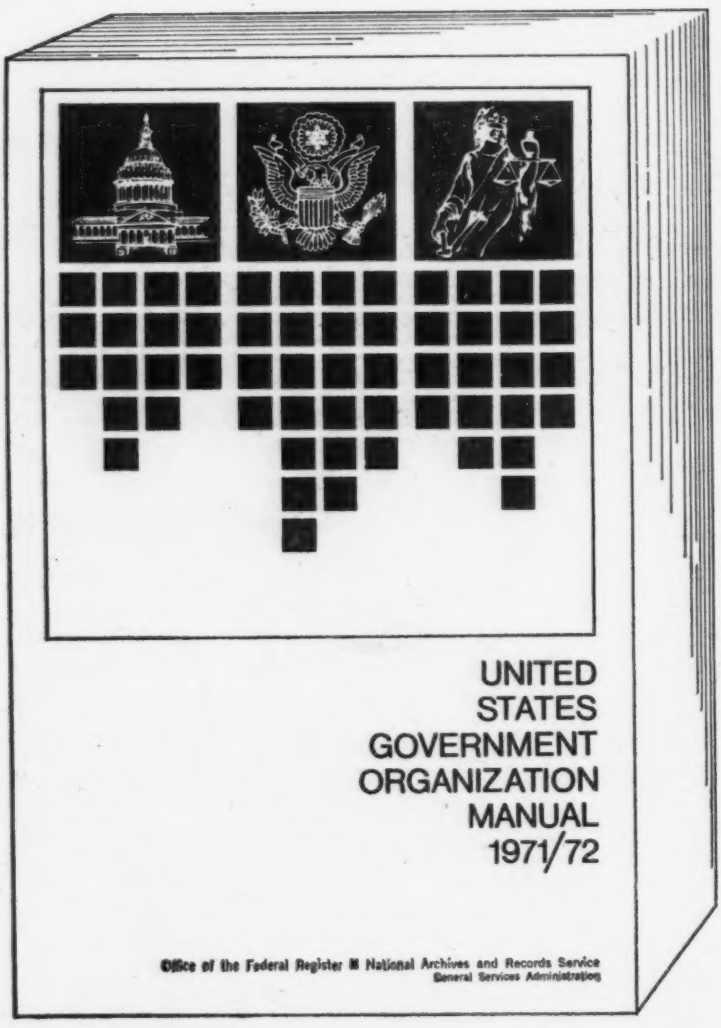

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Most agency statements include new "Sources of Information" listings which tell you what offices to contact for information on such matters as:

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